SEQUENCE LISTING

<110> Bristol-Myers Squibb Company <120> A NOVEL HUMAN G-PROTEIN COUPLED RECEPTOR, HGPRBMY8, EXPRESSED HIGHLY IN BRAIN <130> D0047A-CIP <150> U.S. 09/992,238 <151> 2001-11-14 <150> U.S. 60/248,285 <151> 2000-11-14 <150> U.S. 60/268,581 <151> 2001-02-14 <150> U.S. 60/308,285 <151> 2001-07-27 <150> U.S. 60/317,166 <151> 2001-09-04 <160> 134 <170> PatentIn version 3.2 <210> 1 <211> 1527 <212> DNA <213> Homo sapiens <400> 1 atgacgtcca cctgcaccaa cagcacgcgc gagagtaaca gcagccacac gtgcatgccc 60 ctetecaaaa tgeccateag cetggeceae ggeateatee geteaacegt getggttate 120 tteetegeeg eetetttegt eggeaacata gtgetggege tagtgttgea gegeaageeg 180 cagetgetge aggtgaceaa cegttttate tttaacetee tegtcacega cetgetgeag 240 atttegeteg tggececetg ggtggtggee acetetgtge etetettetg geceetcaae 300 agecacttet geaeggeest ggttageste acceacetgt tegeettege eagegteaac 360 accattgtct tggtgtcagt ggatcgctac ttgtccatca tccaccctct ctcctacccg 420 tecaagatga eccagegeeg eggttaeetg etectetatg geacetggat tgtggeeate 480 ctgcagagca ctcctccact ctacggctgg ggccaggctg cctttgatga gcgcaatgct 540 ctctgctcca tgatctgggg ggccagcccc agctacacta ttctcagcgt ggtgtccttc 600 atogteatte cactgattgt catgattgee tgetacteeg tggtgttetg tgeageeegg 660

720

aggcagcatg ctctgctgta caatgtcaag agacacagct tggaagtgcg agtcaaggac

tgtgtggaga atgaggatga agagggagca gagaagaagg aggaqttcca ggatgagaqt 780 gagtttcgcc gccagcatga aggtgaggtc aaggccaagg agggcagaat ggaagccaag 840 gacggcagcc tgaaggccaa ggaaggaagc acggggacca gtgagagtag tgtagaggcc 900 960 aggggcagcg aggaggtcag agagagcagc acggtggcca gcgacggcag catggagggt aaggaaggca gcaccaaagt tgaggagaac agcatgaagg cagacaaggg tcgcacagag 1020 gtcaaccagt gcagcattga cttgggtgaa gatgacatgg agtttggtga agacgacatc 1080 aatttcagtg aggatgacgt cgaggcagtg aacatcccgg agagcctccc acccagtcgt 1140 cgtaacagca acagcaaccc tcctctgccc aggtgctacc agtgcaaagc tgctaaagtg 1200 atetteatea teattttete etatgtgeta teeetgggge eetactgett tttageagte 1260 ctggccgtgt gggtggatgt cgaaacccag gtaccccagt gggtgatcac cataatcatc 1320 tggcttttct tcctgcagtg ctgcatccac ccctatgtct atggctacat gcacaagacc 1380 attaagaagg aaatccagga catgctgaag aagttcttct gcaaggaaaa gcccccgaaa 1440 gaagatagcc acccagacct gcccggaaca gagggtggga ctgaaggcaa gattgtccct 1500 tcctacgatt ctgctacttt tccttga 1527

<210> 2

<211> 508

<212> PRT

<213> Homo sapiens

<400> 2

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Thr Cys Met Pro Leu Ser Lys Met Pro Ile Ser Leu Ala His Gly Ile
20 25 30

Ile Arg Ser Thr Val Leu Val Ile Phe Leu Ala Ala Ser Phe Val Gly 35 40 45

Asn Ile Val Leu Ala Leu Val Leu Gln Arg Lys Pro Gln Leu Leu Gln 50 55 60

Val Thr Asn Arg Phe Ile Phe Asn Leu Leu Val Thr Asp Leu Leu Gln 65 70 75 80

Ile Ser Leu Val Ala Pro Trp Val Val Ala Thr Ser Val Pro Leu Phe 85 90 95

Trp Pro Leu Asn Ser His Phe Cys Thr Ala Leu Val Ser Leu Thr His

105

Leu Phe Ala Phe Ala Ser Val Asn Thr Ile Val Leu Val Ser Val Asp 115 120 125

Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met Thr 130 135 140

Gln Arg Arg Gly Tyr Leu Leu Tyr Gly Thr Trp Ile Val Ala Ile 145 150 155 160

Leu Gln Ser Thr Pro Pro Leu Tyr Gly Trp Gly Gln Ala Ala Phe Asp 165 170 175

Glu Arg Asn Ala Leu Cys Ser Met Ile Trp Gly Ala Ser Pro Ser Tyr 180 185 190

Thr Ile Leu Ser Val Val Ser Phe Ile Val Ile Pro Leu Ile Val Met 195 200 205

Ile Ala Cys Tyr Ser Val Val Phe Cys Ala Ala Arg Arg Gln His Ala 210 215 220

Leu Leu Tyr Asn Val Lys Arg His Ser Leu Glu Val Arg Val Lys Asp 225 230 235 240

Cys Val Glu Asn Glu Asp Glu Glu Gly Ala Glu Lys Lys Glu Glu Phe 245 250 255

Gln Asp Glu Ser Glu Phe Arg Arg Gln His Glu Gly Glu Val Lys Ala 260 265 270

Lys Glu Gly Arg Met Glu Ala Lys Asp Gly Ser Leu Lys Ala Lys Glu 275 280 285

Gly Ser Thr Gly Thr Ser Glu Ser Ser Val Glu Ala Arg Gly Ser Glu 290 295 300

Glu Val Arg Glu Ser Ser Thr Val Ala Ser Asp Gly Ser Met Glu Gly

Lys Glu Gly Ser Thr Lys Val Glu Glu Asn Ser Met Lys Ala Asp Lys 325 330 335

Gly Arg Thr Glu Val Asn Gln Cys Ser Ile Asp Leu Gly Glu Asp Asp 340 345 350

Met Glu Phe Gly Glu Asp Asp Ile Asn Phe Ser Glu Asp Asp Val Glu 355 360 365

Ala Val Asn Ile Pro Glu Ser Leu Pro Pro Ser Arg Arg Asn Ser Asn 370 375 380

Ser Asn Pro Pro Leu Pro Arg Cys Tyr Gln Cys Lys Ala Ala Lys Val 385 390 395 400

Ile Phe Ile Ile Phe Ser Tyr Val Leu Ser Leu Gly Pro Tyr Cys 405 410 415

Phe Leu Ala Val Leu Ala Val Trp Val Asp Val Glu Thr Gln Val Pro 420 425 430

Gln Trp Val Ile Thr Ile Ile Ile Trp Leu Phe Phe Leu Gln Cys Cys 435 440 445

Ile His Pro Tyr Val Tyr Gly Tyr Met His Lys Thr Ile Lys Lys Glu 450 455 460

Ile Gln Asp Met Leu Lys Lys Phe Phe Cys Lys Glu Lys Pro Pro Lys 465 470 475 480

Glu Asp Ser His Pro Asp Leu Pro Gly Thr Glu Gly Gly Thr Glu Gly 485 490 495

Lys Ile Val Pro Ser Tyr Asp Ser Ala Thr Phe Pro 500 505

<210> 3

<211> 31

<212> DNA

<213> Homo sapiens

<400> 3

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<21	0 >	5														
<21		33														
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<21	3>	HOIIIO	sap	rens												
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<21	0 >	7														
<21		490														
<212		PRT														
<213	3 >	Gall	us ga	allu	S											
<40	0>	7														
Met	His	Asn	Leu	Ser	Ala	Gln	Pro	Trp	Gln	Ala	Lvs	Met	Ala	Asn	Leu	
1				5					10		_1.			15		
Thr	Tur	Agn	Δen	Val	Thr	T.e.11	Ser	Δan	Δrα	Ser	Glu	Val	Δla	Tla	Gln	
	-1-	1101	20	, ,		Lea	DCI	25	9	DCI	OIU	vui	30	110	0111	
Dro	Dro	The	7 ~~	TT+ + **	T	mb ~	17a 7	~1	T	17a]	Dh.a	T1.	7.7.~	шь	17a 7	
PIO	PIO	35	ASII	ıyı	гуя	1111	Val 40	GIU	Leu	vai	Pne	45	Ala	THE	vai	
		33					- 0					13				
Thr		Ser	Leu	Ser	Leu		Thr	Val	Val	Gly		Ile	Leu	Val	Met	
	50					55					60					
Leu 65	Ser	Ile	Lys	Val	Asn	Arg	Gln	Leu	Gln	Thr	Val	Asn	Asn	Tyr	Phe	

Asn Leu Tyr Thr Val Tyr Ile Ile Lys Gly Tyr Trp Pro Leu Gly Ala Val Val Cys Asp Leu Trp Leu Ala Leu Asp Tyr Val Val Ser Asn Ala Ser Val Met Asn Leu Leu Ile Ile Ser Phe Asp Arg Tyr Phe Cys Val Thr Lys Pro Leu Thr Tyr Pro Ala Arg Arg Thr Thr Lys Met Ala Gly Leu Met Ile Ala Ala Ala Trp Ile Leu Ser Phe Ile Leu Trp Ala Pro Ala Ile Leu Phe Trp Gln Phe Ile Val Gly Lys Arg Thr Val His Glu Arg Glu Cys Tyr Ile Gln Phe Leu Ser Asn Pro Ala Val Thr Phe Gly Thr Ala Ile Ala Ala Phe Tyr Leu Pro Val Val Ile Met Thr Val Leu Tyr Ile His Ile Ser Leu Ala Ser Arg Ser Arg Val Arg Arg His Lys Pro Glu Ser Arg Lys Glu Arg Lys Gly Lys Ser Leu Ser Phe Phe Lys Ala Pro Pro Val Lys Gln Asn Asn Asn Ser Pro Lys Arg Ala Val Glu Val Lys Glu Glu Val Arg Asn Gly Lys Val Asp Asp Gln Pro Ser Ala Gln Thr Glu Ala Thr Gly Gln Glu Glu Lys Glu Thr Ser Asn

Leu Phe Ser Leu Ala Cys Ala Asp Leu Ile Ile Gly Val Phe Ser Met

Glu Ser Ser Thr Val Ser Met Thr Gln Thr Thr Lys Asp Lys Pro Thr

305	310	315	320

Thr Glu Ile Leu Pro Ala Gly Gln Gly Gln Ser Pro Ala His Pro Arg
325 330 335

Val Asn Pro Thr Ser Lys Trp Ser Lys Ile Lys Ile Val Thr Lys Gln 340 345 350

Thr Gly Thr Glu Ser Val Thr Ala Ile Glu Ile Val Pro Ala Lys Ala 355 360 365

Gly Ala Ser Asp His Asn Ser Leu Ser Asn Ser Arg Pro Ala Asn Val 370 375 380

Ala Arg Lys Phe Ala Ser Ile Ala Arg Ser Gln Val Arg Lys Lys Arg 385 390 395 400

Gln Met Ala Ala Arg Glu Lys Lys Val Thr Arg Thr Ile Phe Ala Ile 405 410 415

Leu Leu Ala Phe Ile Leu Thr Trp Thr Pro Tyr Asn Val Met Val Leu 420 425 430

Ile Asn Thr Phe Cys Glu Thr Cys Val Pro Glu Thr Val Trp Ser Ile 435 440 445

Gly Tyr Trp Leu Cys Tyr Val Asn Ser Thr Ile Asn Pro Ala Cys Tyr 450 455 460

Ala Leu Cys Asn Ala Thr Phe Lys Lys Thr Phe Lys His Leu Leu Met 465 470 475 480

Cys Gln Tyr Arg Asn Ile Gly Thr Ala Arg 485 490

<210> 8

<211> 488

<212> PRT

<213> Caenorhabditis elegans

<400> 8

Met Cys Phe Ala Glu Lys Gly Glu Gly Ala Gly Glu Asp Val Asp His

5 10 15

- His Ser Leu Phe Cys Pro Lys Lys Leu Val Gly Asn Leu Lys Gly Phe 20 25 30
- Ile Arg Asn Gln Tyr His Gln His Glu Thr Ile Gln Ile Leu Lys Gly 35 40 45
- Ser Ala Leu Phe Leu Leu Val Leu Trp Thr Ile Phe Ala Asn Ser Leu 50 55 60
- Val Phe Ile Val Leu Tyr Lys Asn Pro Arg Leu Gln Thr Val Pro Asn 65 70 75 80
- Leu Leu Val Gly Asn Leu Ala Phe Ser Asp Leu Ala Leu Gly Leu Ile 85 90 95
- Val Leu Pro Leu Ser Ser Val Tyr Ala Ile Ala Gly Glu Trp Val Phe
 100 105 110
- Pro Asp Ala Leu Cys Glu Val Phe Val Ser Ala Asp Ile Leu Cys Ser 115 120 125
- Thr Ala Ser Ile Trp Asn Leu Ser Ile Val Gly Leu Asp Arg Tyr Trp 130 135 140
- Ala Ile Thr Ser Pro Val Ala Tyr Met Ser Lys Arg Asn Lys Arg Thr 145 150 155 160
- Ala Gly Ile Met Ile Leu Ser Val Trp Ile Ser Ser Ala Leu Ile Ser 165 170 175
- Leu Ala Pro Leu Gly Trp Lys Gln Thr Ala Gln Thr Pro Asn Leu 180 185 190
- Ile Tyr Glu Lys Asn Asn Thr Val Arg Gln Cys Thr Phe Leu Asp Leu 195 200 205
- Pro Ser Tyr Thr Val Tyr Ser Ala Thr Gly Ser Phe Phe Ile Pro Thr 210 215 220
- Leu Leu Met Phe Phe Val Tyr Phe Lys Ile Tyr Gln Ala Phe Ala Lys 225 230 235 240

- His Arg Ala Arg Gln Ile Tyr Arg Gln Lys Val Ile Arg Lys His Ile 245 250 255
- Glu Ser Thr Ile Leu His Glu Ile Ser His Val Leu Pro Thr Ser Asp 260 265 270
- Glu Phe Ala Lys Glu Glu Glu Glu Glu Glu Asp Ser Glu Ser Ser Gly 275 280 285
- Gln Val Glu Asn Gly Leu Gly Asn Gly Asn Asp Ala Ile Ile Glu Glu 290 295 300
- Asp Glu Cys Glu Asp Glu Asp Ser Asp Glu Lys Arg Asp Asp His Thr 305 310 315 320
- Ser Met Thr Thr Val Thr Ala Thr Val Thr Gly Pro Thr Glu Ala Pro 325 330 335
- Tyr Met Lys Arg Glu Ala Lys Ile Ser Lys Ser Val Pro Ile Glu Lys 340 345 350
- Glu Ser Ala Ile Gln Lys Arg Glu Ala Lys Pro Met Arg Ser Val Met 355 360 365
- Ala Ile Ser Tyr Glu Lys Val Lys Arg His Lys Asn Arg Lys Glu Arg 370 375 380
- Ile Tyr Arg Lys Ser Leu Gln Arg Lys Pro Lys Ala Ile Ser Ala Ala 385 390 395 400
- Lys Glu Arg Arg Gly Val Lys Val Leu Gly Ile Ile Leu Gly Cys Phe 405 410 415
- Thr Val Cys Trp Ala Pro Phe Phe Thr Met Tyr Val Leu Val Gln Phe 420 425 430
- Cys Lys Asp Cys Ser Pro Asn Ala His Ile Glu Met Phe Ile Thr Trp 435 440 445
- Leu Gly Tyr Ser Asn Ser Ala Met Asn Pro Ile Ile Tyr Thr Val Phe 450 455 460
- Asn Arg Asp Tyr Gln Ile Ala Leu Lys Arg Leu Phe Thr Ser Glu Lys

465 470 475 480

Lys Pro Ser Ser Thr Ser Arg Val 485

<210> 9

<211> 423

<212> PRT

<213> Homo sapiens

<400> 9

Met Asp Leu Arg Ala Thr Ser Ser Asn Asp Ser Asn Ala Thr Ser Gly

1 10 15

Tyr Ser Asp Thr Ala Ala Val Asp Trp Asp Glu Gly Glu Asn Ala Thr 20 25 30

Gly Ser Gly Ser Leu Pro Asp Pro Glu Leu Ser Tyr Gln Ile Ile Thr 35 40 45

Ser Leu Phe Leu Gly Ala Leu Ile Leu Cys Ser Ile Phe Gly Asn Ser 50 55 60

Cys Val Val Ala Ala Ile Ala Leu Glu Arg Ser Leu Gln Asn Val Ala 65 70 75 80

Asn Tyr Leu Ile Gly Ser Leu Ala Val Thr Asp Leu Met Val Ser Val 85 90 95

Leu Val Leu Pro Met Ala Ala Leu Tyr Gln Val Leu Asn Lys Trp Thr
100 105 110

Leu Gly Gln Asp Ile Cys Asp Leu Phe Ile Ala Leu Asp Val Leu Cys
115 120 125

Cys Thr Ser Ser Ile Leu His Leu Cys Ala Ile Ala Leu Asp Arg Tyr 130 135 140

Trp Ala Ile Thr Asp Pro Ile Asp Tyr Val Asn Lys Arg Thr Pro Arg 145 150 155 160

Arg Ala Ala Val Leu Ile Ser Val Thr Trp Leu Ile Gly Phe Ser Ile 165 170 175

Ser Ile Pro Pro Met Leu Gly Trp Arg Ser Ala Glu Asp Arg Ala Asn Pro Asp Ala Cys Ile Ile Ser Gln Asp Pro Gly Tyr Thr Ile Tyr Ser Thr Phe Gly Ala Phe Tyr Ile Pro Leu Ile Leu Met Leu Val Leu Tyr Gly Arg Ile Phe Lys Ala Ala Arg Phe Arg Ile Arg Lys Thr Val Lys Lys Thr Glu Lys Ala Lys Ala Ser Asp Met Cys Leu Thr Leu Ser Pro Ala Val Phe His Lys Arg Ala Asn Gly Asp Ala Val Ser Ala Glu Trp Lys Arg Gly Tyr Lys Phe Lys Pro Ser Ser Pro Cys Ala Asn Gly Ala Val Arg His Gly Glu Glu Met Glu Ser Leu Glu Ile Ile Glu Val Asn Ser Asn Ser Lys Thr His Leu Pro Leu Pro Asn Thr Pro Gln Ser Ser Ser His Glu Asn Ile Asn Glu Lys Thr Thr Gly Thr Arg Arg Lys Ile Ala Leu Ala Arg Glu Arg Lys Thr Val Lys Thr Leu Gly Ile Ile Met Gly Thr Phe Ile Phe Cys Trp Leu Pro Phe Phe Ile Val Ala Leu Val Leu Pro Phe Cys Ala Glu Asn Cys Tyr Met Pro Glu Trp Leu Gly Ala Val Ile Asn Trp Leu Gly Tyr Ser Asn Ser Leu Leu Asn Pro Ile Ile

Tyr Ala Tyr Phe Asn Lys Asp Phe Gln Ser Ala Phe Lys Lys Ile Leu 405 410 415

Arg Cys Lys Phe His Arg His 420

<210> 10

<211> 421

<212> PRT

<213> Mus musculus

<400> 10

Met Asp Met Phe Ser Leu Gly Gln Gly Asn Asn Thr Thr Ser Leu 1 5 10 15

Glu Pro Phe Gly Thr Gly Gly Asn Asp Thr Gly Leu Ser Asn Val Thr 20 25 30

Phe Ser Tyr Gln Val Ile Thr Ser Leu Leu Gly Thr Leu Ile Phe 35 40 45

Cys Ala Val Leu Gly Asn Ala Cys Val Val Ala Ala Ile Ala Leu Glu 50 55 60

Arg Ser Leu Gln Asn Val Ala Asn Tyr Leu Ile Gly Ser Leu Ala Val 65 70 75 80

Thr Asp Leu Met Val Ser Val Leu Val Leu Pro Met Ala Ala Leu Tyr 85 90 95

Gln Val Leu Asn Lys Trp Thr Leu Gly Gln Val Thr Cys Asp Leu Phe 100 105 110

Ile Ala Leu Asp Val Leu Cys Cys Thr Ser Ser Ile Leu His Leu Cys
115 120 125

Ala Ile Ala Leu Asp Arg Tyr Trp Ala Ile Thr Asp Pro Ile Asp Tyr 130 135 140

Val Asn Lys Arg Thr Pro Arg Arg Ala Ala Leu Ile Ser Leu Thr 145 150 155 160

Trp Leu Ile Gly Phe Leu Ile Ser Ile Pro Pro Met Leu Gly Trp Arg 165 170 175

Ala Pro Glu Asp Arg Ser Asn Pro Asn Glu Cys Thr Ile Ser Lys Asp His Gly Tyr Thr Ile Tyr Ser Thr Phe Gly Ala Phe Tyr Ile Pro Leu Leu Leu Met Leu Val Leu Tyr Gly Arg Ile Phe Arg Ala Ala Arg Phe Arg Ile Arg Lys Thr Val Lys Lys Val Glu Lys Lys Gly Ala Gly Thr Ser Phe Gly Thr Ser Ser Ala Pro Pro Pro Lys Lys Ser Leu Asn Gly Gln Pro Gly Ser Gly Asp Cys Arg Arg Ser Ala Glu Asn Arg Ala Val Gly Thr Pro Cys Ala Asn Gly Ala Val Arg Gln Gly Glu Asp Asp Ala Thr Leu Glu Val Ile Glu Val His Arg Val Gly Asn Ser Lys Gly Asp Leu Pro Leu Pro Ser Glu Ser Gly Ala Thr Ser Tyr Val Pro Ala Cys Leu Glu Arg Lys Asn Glu Arg Thr Ala Glu Ala Lys Arg Lys Met Ala Leu Ala Arg Glu Arg Lys Thr Val Lys Thr Leu Gly Ile Ile Met Gly Thr Phe Ile Leu Cys Trp Leu Pro Phe Phe Ile Val Ala Leu Val Leu Pro Phe Cys Glu Ser Ser Cys His Met Pro Glu Leu Leu Gly Ala Ile Ile Asn Trp Leu Gly Tyr Ser Asn Ser Leu Leu Asn Pro Val Ile Tyr

Ala Tyr Phe Asn Lys Asp Phe Gln Asn Ala Phe Lys Lys Ile Ile Lys 405 410 415

Cys Lys Phe Cys Arg 420

<210> 11

<211> 423

<212> PRT

<213> Fugu rubripes

<400> 11

Met Asp Leu Arg Ala Thr Ser Ser Asn Asp Ser Asn Ala Thr Ser Gly

1 10 15

Tyr Ser Asp Thr Ala Ala Val Asp Trp Asp Glu Gly Glu Asn Ala Thr 20 25 30

Gly Ser Gly Ser Leu Pro Asp Pro Glu Leu Ser Tyr Gln Ile Ile Thr 35 40 45

Ser Leu Phe Leu Gly Ala Leu Ile Leu Cys Ser Ile Phe Gly Asn Ser 50 55 60

Cys Val Val Ala Ala Ile Ala Leu Glu Arg Ser Leu Gln Asn Val Ala 65 70 75 80

Asn Tyr Leu Ile Gly Ser Leu Ala Val Thr Asp Leu Met Val Ser Val 85 90 95

Leu Val Leu Pro Met Ala Ala Leu Tyr Gln Val Leu Asn Lys Trp Thr
100 105 110

Leu Gly Gln Asp Ile Cys Asp Leu Phe Ile Ala Leu Asp Val Leu Cys
115 120 125

Cys Thr Ser Ser Ile Leu His Leu Cys Ala Ile Ala Leu Asp Arg Tyr 130 135 140

Trp Ala Ile Thr Asp Pro Ile Asp Tyr Val Asn Lys Arg Thr Pro Arg 145 150 155 160

Arg Ala Ala Val Leu Ile Ser Val Thr Trp Leu Ile Gly Phe Ser Ile

Ser	Ile	Pro	Pro 180	Met	Leu	Gly	Trp	Arg 185	Ser	Ala	Glu	Asp	Arg 190	Ala	Asn
Pro	Asp	Ala 195	Cys	Ile	Ile	Ser	Gln 200	Asp	Pro	Gly	Tyr	Thr 205	Ile	Tyr	Ser
Thr	Phe 210	Gly	Ala	Phe	Tyr	Ile 215	Pro	Leu	Ile	Leu	Met 220	Leu	Val	Leu	Tyr
Gly 225	Arg	Ile	Phe	Lys	Ala 230	Ala	Arg	Phe	Arg	Ile 235	Arg	Lys	Thr	Val	Lys 240
Lys	Thr	Glu	Lys	Ala 245	Lys	Ala	Ser	Asp	Met 250	Cys	Leu	Thr	Leu	Ser 255	Pro
Ala	Val	Phe	His 260	Lys	Arg	Ala	Asn	Gly 265	Asp	Ala	Val	Ser	Ala 270	Glu	Trp
Lys	Arg	Gly 275	Tyr	Lys	Phe	Lys	Pro 280	Ser	Ser	Pro	Cys	Ala 285	Asn	Gly	Ala
Val	Arg 290	His	Gly	Glu	Glu	Met 295	Glu	Ser	Leu	Glu	Ile 300	Ile	Glu	Val	Asn
Ser 305	Asn	Ser	Lys	Thr	His 310	Leu	Pro	Leu	Pro	Asn 315	Thr	Pro	Gln	Ser	Ser 320
Ser	His	Glu	Asn	Ile 325	Asn	Glu	Lys	Thr	Thr 330	Gly	Thr	Arg	Arg	Lys 335	Ile
Ala	Leu	Ala	Arg 340	Glu	Arg	Lys	Thr	Val 345	Lys	Thr	Leu	Gly	Ile 350	Ile	Met
Gly	Thr	Phe 355	Ile	Phe	Cys	Trp	Leu 360	Pro	Phe	Phe	Ile	Val 365	Ala	Leu	Val
Leu	Pro 370	Phe	Cys	Ala	Glu	Asn 375	Cys	Tyr	Met	Pro	Glu 380	Trp	Leu	Gly	Ala
Val	Ile	Asn	Trp	Leu	Gly	Tyr	Ser	Asn	Ser	Leu	Leu	Asn	Pro	Ile	Ile

Tyr Ala Tyr Phe Asn Lys Asp Phe Gln Ser Ala Phe Lys Lys Ile Leu 405 410 415

Arg Cys Lys Phe His Arg His 420

<210> 12

<211> 509

<212> PRT

<213> Lymnaea stagnalis

<400> 12

Met Ala Asn Phe Thr Phe Gly Asp Leu Ala Leu Asp Val Ala Arg Met 1 5 10 15

Gly Gly Leu Ala Ser Thr Pro Ser Gly Leu Arg Ser Thr Gly Leu Thr 20 25 30

Thr Pro Gly Leu Ser Pro Thr Gly Leu Val Thr Ser Asp Phe Asn Asp 35 40 45

Ser Tyr Gly Leu Thr Gly Gln Phe Ile Asn Gly Ser His Ser Ser Arg 50 55 60

Ser Arg Asp Asn Ala Ser Ala Asn Asp Thr Ser Ala Thr Asn Met Thr 65 70 75 80

Asp Asp Arg Tyr Trp Ser Leu Thr Val Tyr Ser His Glu His Leu Val 85 90 95

Leu Thr Ser Val Ile Leu Gly Leu Phe Val Leu Cys Cys Ile Ile Gly
100 105 110

Asn Cys Phe Val Ile Ala Ala Val Met Leu Glu Arg Ser Leu His Asn 115 120 125

Val Ala Asn Tyr Leu Ile Leu Ser Leu Ala Val Ala Asp Leu Met Val 130 135 140

Ala Val Leu Val Met Pro Leu Ser Val Val Ser Glu Ile Ser Lys Val 145 150 155 160

Trp Phe Leu His Ser Glu Val Cys Asp Met Trp Ile Ser Val Asp Val 165 170 Leu Cys Cys Thr Ala Ser Ile Leu His Leu Val Ala Ile Ala Met Asp 185 Arg Tyr Trp Ala Val Thr Ser Ile Asp Tyr Ile Arg Arg Arg Ser Ala 195 200 205 Arg Arg Ile Leu Leu Met Ile Met Val Val Trp Ile Val Ala Leu Phe 210 215 Ile Ser Ile Pro Pro Leu Phe Gly Trp Arg Asp Pro Asn Asp Pro 225 . 230 235 Asp Lys Thr Gly Thr Cys Ile Ile Ser Gln Asp Lys Gly Tyr Thr Ile 250 Phe Ser Thr Val Gly Ala Phe Tyr Leu Pro Met Leu Val Met Met Ile 260 Ile Tyr Ile Arg Ile Trp Leu Val Ala Arg Ser Arg Ile Arg Lys Asp 275 Lys Phe Gln Met Thr Lys Ala Arg Leu Lys Thr Glu Glu Thr Thr Leu 290 Val Ala Ser Pro Lys Thr Glu Tyr Ser Val Val Ser Asp Cys Asn Gly 305 310 Cys Asn Ser Pro Asp Ser Thr Thr Glu Lys Lys Lys Arg Arg Ala Pro Phe Lys Ser Tyr Gly Cys Ser Pro Arg Pro Glu Arg Lys Lys Asn Arg Ala Lys Lys Leu Pro Glu Asn Ala Asn Gly Val Asn Ser Asn Ser Ser 355 360 365 Ser Ser Glu Arg Leu Lys Gln Ile Gln Ile Glu Thr Ala Glu Ala Phe 370 375 380 Ala Asn Gly Cys Ala Glu Glu Ala Ser Ile Ala Met Leu Glu Arg Gln

Cys Asn Asn Gly Lys Lys Ile Ser Ser Asn Asp Thr Pro Tyr Ser Arg 405 410 415

Thr Arg Glu Lys Leu Glu Leu Lys Arg Glu Arg Lys Ala Ala Arg Thr 420 425 430

Leu Ala Ile Ile Thr Gly Ala Phe Leu Ile Cys Trp Leu Pro Phe Phe 435 440 445

Ile Ile Ala Leu Ile Gly Pro Phe Val Asp Pro Glu Gly Ile Pro Pro 450 455 460

Phe Ala Arg Ser Phe Val Leu Trp Leu Gly Tyr Phe Asn Ser Leu Leu 465 470 475 480

Asn Pro Ile Ile Tyr Thr Ile Phe Ser Pro Glu Phe Arg Ser Ala Phe 485 490 495

Gln Lys Ile Leu Phe Gly Lys Tyr Arg Arg Gly His Arg 500 505

<210> 13

<211> 572

<212> PRT

<213> Homo sapiens

<400> 13

Met Thr Phe Arg Asp Leu Leu Ser Val Ser Phe Glu Gly Pro Arg Pro 1 5 10 15

Asp Ser Ser Ala Gly Gly Ser Ser Ala Gly Gly Gly Gly Ser Ala 20 25 30

Gly Gly Ala Ala Pro Ser Glu Gly Pro Ala Val Gly Gly Val Pro Gly
35 40 45

Gly Ala Gly Gly Gly Gly Val Val Gly Ala Gly Ser Gly Glu Asp 50 55 60

Asn Arg Ser Ser Ala Gly Glu Pro Gly Ser Ala Gly Ala Gly Gly Asp 65 70 75 80

- Val Asn Gly Thr Ala Ala Val Gly Gly Leu Val Val Ser Ala Gln Gly 85 90 95
- Gly Asn Leu Leu Val Ile Leu Ser Val Ala Cys Asn Arg His Leu Gln
 115 120 125
- Thr Val Thr Asn Tyr Phe Ile Val Asn Leu Ala Val Ala Asp Leu Leu 130 135 140
- Phe Trp Ala Phe Gly Arg Ala Phe Cys Asp Val Trp Ala Ala Val Asp 165 170 175
- Val Leu Cys Cys Thr Ala Ser Ile Leu Ser Leu Cys Thr Ile Ser Val 180 185 190
- Asp Arg Tyr Val Gly Val Arg His Ser Leu Lys Tyr Pro Ala Ile Met 195 200 205
- Thr Glu Arg Lys Ala Ala Ala Ile Leu Ala Leu Leu Trp Val Val Ala 210 215 220
- Leu Val Val Ser Val Gly Pro Leu Leu Gly Trp Lys Glu Pro Val Pro 225 230 235 240
- Pro Asp Glu Arg Phe Cys Gly Ile Thr Glu Glu Ala Gly Tyr Ala Val 245 250 255
- Phe Ser Ser Val Cys Ser Phe Tyr Leu Pro Met Ala Val Ile Val Val 260 265 270
- Met Tyr Cys Arg Val Tyr Val Val Ala Arg Ser Thr Thr Arg Ser Leu 275 280 285
- Glu Ala Gly Val Lys Arg Glu Arg Gly Lys Ala Ser Glu Val Val Leu 290 295 300

Arg Ile His Cys Arg Gly Ala Ala Thr Gly Ala Asp Gly Ala His Gly Met Arg Ser Ala Lys Gly His Thr Phe Arg Ser Ser Leu Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys Thr Leu Ala Ile Val Val Gly Val Phe Val Leu Cys Trp Phe Pro Phe Phe Val Leu Pro Leu Gly Ser Leu Phe Pro Gln Leu Lys Pro Ser Glu Gly Val Phe Lys Val Ile Phe Trp Leu Gly Tyr Phe Asn Ser Cys Val Asn Pro Leu Ile Tyr Pro Cys Ser Ser Arg Glu Phe Lys Arg Ala Phe Leu Arg Leu Leu Arg Cys Gln Cys Arg Arg Arg Arg Arg Arg Pro Leu Trp Arg Val Tyr Gly His His Trp Arg Ala Ser Thr Ser Gly Leu Arg Gln Asp Cys Ala Pro Ser Ser Gly Asp Ala Pro Pro Gly Ala Pro Leu Ala Leu Thr Ala Leu Pro Asp Pro Asp Pro Glu Pro Pro Gly Thr Pro Glu Met Gln Ala Pro Val Ala Ser Arg Arg Lys Pro Pro Ser Ala Phe Arg Glu Trp Arg Leu Leu Gly Pro Phe Arg Pro Thr Thr Gln Leu Arg Ala Lys Val Ser Ser Leu Ser His Lys Ile Arg Ala Gly Gly Ala Gln Arg Ala Glu Ala Ala Cys Ala Gln Arg Ser Glu Val Glu Ala Val Ser Leu

530 535 540

Gly Val Pro His Glu Val Ala Glu Gly Ala Thr Cys Gln Ala Tyr Glu 545 550 555 560

Leu Ala Asp Tyr Ser Asn Leu Arg Glu Thr Asp Ile 565 570

<210> 14

<211> 562

<212> PRT

<213> Mus musculus

<400> 14

Met Thr Phe Arg Asp Ile Leu Ser Val Thr Phe Glu Gly Pro Arg Ala 1 5 10 15

Ser Ser Ser Thr Gly Gly Ser Gly Ala Gly Gly Gly Ala Gly Thr Val 20 25 30

Gly Pro Glu Gly Pro Ala Val Gly Gly Val Pro Gly Ala Thr Gly Gly
35 40 45

Ser Ala Val Val Gly Thr Gly Ser Gly Glu Asp Asn Gln Ser Ser Thr 50 55 60

Ala Glu Ala Gly Ala Ala Ala Ser Gly Glu Val Asn Gly Ser Ala Ala 65 70 75 80

Val Gly Gly Leu Val Val Ser Ala Gln Gly Val Gly Val Gly Val Phe
85 90 95

Leu Ala Ala Phe Ile Leu Thr Ala Val Ala Gly Asn Leu Leu Val Ile 100 105 110

Leu Ser Val Ala Cys Asn Arg His Leu Gln Thr Val Thr Asn Tyr Phe 115 120 125

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Ser Ala Ala Val Leu 130 135 140

Pro Phe Ser Ala Thr Met Glu Val Leu Gly Phe Trp Pro Phe Gly Arg 145 150 155 160

Thr Phe Cys Asp Val Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala Ser Ile Leu Ser Leu Cys Thr Ile Ser Val Asp Arg Tyr Val Gly Val Arg His Ser Leu Lys Tyr Pro Ala Ile Met Thr Glu Arg Lys Ala Ala Ala Ile Leu Ala Leu Leu Trp Ala Val Ala Leu Val Val Ser Val Gly Pro Leu Leu Gly Trp Lys Glu Pro Val Pro Pro Asp Glu Arg Phe Cys Gly Ile Thr Glu Glu Val Gly Tyr Ala Ile Phe Ser Ser Val Cys Ser Phe Tyr Leu Pro Met Ala Val Ile Val Val Met Tyr Cys Arg Val Tyr Val Val Ala Arg Ser Thr Thr Arg Ser Leu Glu Ala Gly Ile Lys Arg Glu Pro Gly Lys Ala Ser Glu Val Val Leu Arg Ile His Cys Arg Gly Ala Ala Thr Ser Ala Lys Gly Asn Pro Gly Thr Gln Ser Ser Lys Gly His Thr Leu Arg Ser Ser Leu Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys Thr Leu Ala Ile Val Val Gly Val Phe Val Leu Cys Trp Phe Pro Phe Phe Phe Val Leu Pro Leu Gly Ser Leu Phe Pro Gln Leu Lys Pro Ser Glu Gly Val Phe Lys Val Ile Phe Trp Leu 3.70

Gly Tyr Phe Asn Ser Cys Val Asn Pro Leu Ile Tyr Pro Cys Ser Ser 385 390 395 400 Arg Glu Phe Lys Arg Ala Phe Leu Arg Leu Leu Arg Cys Gln Cys Arg Arg Arg Arg Arg Leu Trp Pro Ser Leu Arg Pro Pro Leu Ala Ser 420 425 Leu Asp Arg Arg Pro Ala Leu Arg Leu Cys Pro Gln Pro Ala His Arg 435 440 Thr Pro Arg Gly Ser Pro Ser Pro His Cys Thr Pro Arg Pro Gly Leu 450 455 Arg Arg His Ala Gly Gly Ala Gly Phe Gly Leu Arg Pro Ser Lys Ala 465 470 Ser Leu Arg Leu Arg Glu Trp Arg Leu Leu Gly Pro Leu Gln Arg Pro 485 Thr Thr Gln Leu Arg Ala Lys Val Ser Ser Leu Ser His Lys Phe Arg 500 505 Ser Gly Gly Ala Arg Arg Ala Glu Thr Ala Cys Ala Leu Arg Ser Glu 515 520 Val Glu Ala Val Ser Leu Asn Val Pro Gln Asp Gly Ala Glu Ala Val 530 535 540 Ile Cys Gln Ala Tyr Glu Pro Gly Asp Leu Ser Asn Leu Arg Glu Thr 545 550 Asp Ile <210> 15 <211> 499 <212> PRT <213> Homo sapiens

<400> 15

10

Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr Gln

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr Ile Val Asn Leu Ala Val Ala Asp Leu Leu Thr Ser Thr Val Leu Pro Phe Ser Ala Ile Phe Glu Val Leu Gly Tyr Trp Ala Phe Gly Arq Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Leu Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser Phe Tyr Leu Pro Leu Ala Ile Ile Leu Val Met Tyr Cys Arg Val Tyr Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn

Ala Pro Ala Gly Gly Ser Gly Met Ala Ser Ala Lys Thr Lys Thr His Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Lys Pro Ser Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Arg Arg Lys Gln Ser Ser Lys His Ala Leu Gly Tyr Thr Leu His Pro Pro Ser Gln Ala Val Glu Gly Gln His Lys Asp Met Val Arg Ile Pro Val Gly Ser Arg Glu Thr Phe Tyr Arg Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe Ser Ser Met Pro Arg Gly Ser Ala Arg Ile Thr Val Ser Lys Asp Gln Ser Ser Cys Thr Thr Ala Arg Thr Lys Ser Arg Ser Val Thr Arg Leu Glu Cys Ser Gly Met Ile Leu Ala His Cys Asn Leu Arg Leu Pro Gly Ser Arg Asp Ser Pro Ala Ser Ala Ser Gln Ala Ala Gly Thr Thr Gly

Asp Val Pro Pro Gly Arg Arg His Gln Ala Gln Leu Ile Phe Val Phe 465 470 475 480

Leu Val Glu Thr Gly Phe His His Val Gly Gln Asp Asp Leu Asp Leu 485 490 495

Leu Thr Ser

<210> 16

<211> 429

<212> PRT

<213> Homo sapiens

<400> 16

Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr Gln

5 10 15

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile
20 25 30

Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile 35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr
50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu 65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Val Leu Gly Tyr Trp Ala Phe Gly Arg 85 90 95

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala 100 105 110

Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val 115 120 125

Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Leu 130 135 140

Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly 145 150 155 160

Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser Phe Tyr Leu Pro Leu Ala Ile Ile Leu Val Met Tyr Cys Arg Val Tyr Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn Ala Pro Ala Gly Gly Ser Gly Met Ala Ser Ala Lys Thr Lys Thr His Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Lys Pro Ser Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Arg Arg Lys Gln Ser Ser Lys His Ala Leu Gly Tyr Thr Leu His Pro Pro Ser Gln Ala Val Glu Gly Gln His Lys Asp Met Val Arg Ile Pro Val Gly Ser Arg Glu Thr

Phe Tyr Arg Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe 385 390 395 400

Ser Ser Met Pro Arg Gly Ser Ala Arg Ile Thr Val Ser Lys Asp Gln 405 410 415

Ser Ser Cys Thr Thr Ala Arg Gly His Thr Pro Met Thr 420 425

<210> 17

<211> 455

<212> PRT

<213> Homo sapiens

<400> 17

Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr Gln 1 5 10 15

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile
20 25 30

Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile 35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr 50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Thr Ser Thr Val Leu 65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Val Leu Gly Tyr Trp Ala Phe Gly Arg 85 90 95

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala 100 105 110

Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val 115 120 125

Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Leu 130 135 140

Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly

Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys 165 170 175

Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser 180 185 190

Phe Tyr Leu Pro Leu Ala Ile Ile Leu Val Met Tyr Cys Arg Val Tyr 195 200 205

Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr 210 215 220

Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn 225 230 235 240

Ala Pro Ala Gly Gly Ser Gly Met Ala Ser Ala Lys Thr Lys Thr His 245 250 255

Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys 260 265 270

Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe 275 280 285

Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Lys Pro Ser 290 295 300

Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys 310 315 320

Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala 325 330 335

Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Cys Arg Lys Gln Ser Ser 340 345 350

Lys His Ala Leu Gly Tyr Thr Leu His Pro Pro Ser Gln Ala Val Glu 355 360 365

Gly Gln His Lys Asp Met Val Arg Ile Pro Val Gly Ser Arg Glu Thr 370 375 380 Phe Tyr Arg Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe 385 390 395 400

Ser Ser Met Pro Arg Gly Ser Ala Arg Ile Thr Val Ser Lys Asp Gln 405 410 415

Ser Ser Cys Thr Thr Ala Arg Arg Gly Met Asp Cys Arg Tyr Phe Thr 420 425 430

Lys Asn Cys Arg Glu His Ile Lys His Val Asn Phe Met Met Pro Pro 435 440 445

Trp Arg Lys Gly Leu Glu Cys 450 455

<210> 18

<211> 466

<212> PRT

<213> Rattus norvegicustus norvegicus

<400> 18

Met Val Leu Leu Ser Glu Asn Ala Ser Glu Gly Ser Asn Cys Thr His 1 10 15

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile
20 25 30

Leu Gly Gly Leu Ile Ile Phe Gly Val Leu Gly Asn Ile Leu Val Ile 35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr 50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Thr Ser Thr Val Leu 65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Ile Leu Gly Tyr Trp Ala Phe Gly Arg 85 90 95

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala
100 105 110

Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Val Arg Ala Leu Leu Cys Val Trp Val Leu Ser Leu Val Ile Ser Ile Gly Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser Phe Tyr Val Pro Leu Ala Ile Ile Leu Val Met Tyr Cys Arg Val Tyr Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn Val Pro Ala Glu Gly Gly Val Ser Ser Ala Lys Asn Lys Thr His Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Lys Pro Ser Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala

Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Arg Arg Arg Gln Ser Ser

340 345 350

Lys His Ala Leu Gly Tyr Thr Leu His Pro Pro Ser Gln Ala Leu Glu 355 360 365

Gly Gln His Arg Asp Met Val Arg Ile Pro Val Gly Ser Gly Glu Thr 370 380

Phe Tyr Lys Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe 385 390 395 400

Ser Ser Met Pro Gln Gly Ser Ala Arg Ile Thr Val Pro Lys Asp Gln 405 410 415

Ser Ala Cys Thr Thr Ala Arg Val Arg Ser Lys Ser Phe Leu Gln Val 420 425 430

Cys Cys Cys Val Gly Ser Ser Ala Pro Arg Pro Glu Glu Asn His Gln 435 440 445

Val Pro Thr Ile Lys Ile His Thr Ile Ser Leu Gly Glu Asn Gly Glu 450 455 460

Glu Val 465

<210> 19

<211> 466

<212> PRT

<213> Mus musculus

<400> 19

Met Val Leu Leu Ser Glu Asn Ala Ser Glu Gly Ser Asn Cys Thr His 1 5 10 15

Pro Pro Ala Gln Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile 20 25 30

Leu Gly Gly Leu Ile Ile Phe Gly Val Leu Gly Asn Ile Leu Val Ile 35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr 50 55 60

Pro Phe Ser Ala Ile Phe Glu Ile Leu Gly Tyr Trp Ala Phe Gly Arg Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Val Arg Ala Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly Pro Leu Phe Gly Trp Arg Gln Gln Ala Pro Glu Asp Glu Thr Ile Cys Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser Phe Tyr Val Pro Leu Thr Ile Ile Leu Val Met Tyr Cys Arg Val Tyr Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn Val Pro Ala Glu Gly Ser Gly Val Ser Ser Ala Lys Asn Lys Thr His Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Thr Ser Thr Val Leu

Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asn Phe Lys Pro Pro 290 295 300 Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala 325 330 Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Arg Arg Arg Gln Ser Ser 340 345 Lys His Ala Leu Gly Tyr Thr Leu His Pro Pro Ser Gln Ala Val Glu 355 360 Glu Gln His Arg Gly Met Val Arg Ile Pro Val Gly Ser Gly Glu Thr 370 375 380 Phe Tyr Lys Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe 385 390 395 Ser Ser Met Pro Gln Gly Ser Ala Arg Ile Thr Met Pro Lys Asp Gln 405 Ser Ala Cys Thr Thr Ala Arg Val Arg Ser Lys Ser Phe Leu Gln Val 420 Cys Cys Cys Val Gly Ser Ser Thr Pro Arg Pro Glu Glu Asn His Gln 435 Val Pro Thr Ile Lys Ile His Thr Ile Ser Leu Gly Glu Asn Gly Glu 450 Glu Val 465 <210> 20 <211> 466 <212> PRT <213> Bos taurus <400> 20

10

Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr His

Pro Pro Pro Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr Ile Val Asn Leu Ala Val Ala Asp Leu Leu Thr Ser Thr Val Leu Pro Phe Ser Ala Ile Phe Glu Ile Leu Gly Tyr Trp Ala Phe Gly Arq Val Phe Cys Asn Val Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Lys Arg Gly Leu Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser Phe Tyr Val Pro Leu Thr Ile Ile Leu Val Met Tyr Cys Arg Val Tyr Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr

Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn

Ala Gln Val Gly Gly Ser Gly Val Thr Ser Ala Lys Asn Lys Thr His Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Arg Pro Ser Glu Thr Val Phe Lys Ile Ala Phe Trp Leu Gly Tyr Leu Asn Ser Cys Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Arg Arg Lys Gln Ser Ser Lys His Thr Leu Gly Tyr Thr Leu His Ala Pro Ser His Val Leu Glu Gly Gln His Lys Asp Leu Val Arg Ile Pro Val Gly Ser Ala Glu Thr Phe Tyr Lys Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Ile Phe Ser Ser Leu Pro Arg Gly Ser Ala Arg Met Ala Val Ala Arg Asp Pro Ser Ala Cys Thr Thr Ala Arg Val Arg Ser Lys Ser Phe Leu Gln Val Cys Cys Cys Leu Gly Pro Ser Thr Pro Ser His Gly Glu Asn His Gln Ile Pro Thr Ile Lys Ile His Thr Ile Ser Leu Ser Glu Asn Gly Glu

Glu Val 465

<210> 21

<211> 295

<212> PRT

<213> Canis familiaris

<400> 21

Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr His 1 5 10 15

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile
20 25 30

Leu Gly Gly Leu Ile Ile Phe Gly Val Leu Gly Asn Ile Leu Val Ile 35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr 50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu 65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Ile Leu Gly Tyr Trp Ala Phe Gly Arg 85 90 95

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala 100 105 110

Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val 115 120 125

Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Lys Arg Gly Leu 130 135 140

Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys 165 170 175

Gln Ile Thr Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser 180 185 190 Phe Tyr Val Pro Leu Thr Ile Ile Leu Val Met Tyr Cys Arg Val Tyr 195 200 205

Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr 210 215 220

Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn 225 230 235 240

Ala Pro Val Gly Gly Thr Gly Val Ser Ser Ala Lys Asn Lys Thr His 245 250 255

Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys 260 265 270

Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe 275 280 285

Phe Leu Val Met Pro Ile Gly 290 295

<210> 22

<211> 466

<212> PRT

<213> Oryctolagus cuniculus

<400> 22

Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr His 1 5 10 15

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile 20 25 30

Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile 35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr 50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu 65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Ile Leu Gly Tyr Trp Ala Phe Gly Arg Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala Ser Ile Ile Ser Leu Cys Val Ile Ser Ile Asp Arg Tyr Ile Gly Val Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Leu Arg Ala Leu Leu Cys Val Trp Ala Phe Ser Leu Val Ile Ser Val Gly Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Asp Asp Glu Thr Ile Cys Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser Phe Tyr Val Pro Leu Thr Ile Ile Leu Ala Met Tyr Cys Arg Val Tyr Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn Ala Pro Ala Gly Gly Ser Gly Val Ala Ser Ala Lys Asn Lys Thr His Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Lys Pro Pro

Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys

Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala 325 330 335

Phe Gln Asn Val Leu Lys Ile Gln Cys Leu Arg Arg Lys Gln Ser Ser 340 345 350

Lys His Ala Leu Gly Tyr Thr Leu His Ala Pro Ser Gln Ala Leu Glu 355 360 365

Gly Gln His Lys Asp Met Val Arg Ile Pro Val Gly Ser Gly Glu Thr 370 380

Phe Tyr Lys Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe 385 390 395 400

Ser Ser Met Pro Arg Gly Ser Ala Arg Ile Thr Val Pro Lys Asp Gln 405 410 415

Ser Ala Cys Thr Thr Ala Arg Val Arg Ser Lys Ser Phe Leu Gln Val 420 425 430

Cys Cys Cys Val Gly Pro Ser Thr Pro Asn Pro Gly Glu Asn His Gln
435
440
445

Val Pro Thr Ile Lys Ile His Thr Ile Ser Leu Ser Glu Asn Gly Glu 450 455 460

Glu Val 465

<210> 23

<211> 466

<212> PRT

<213> Homo sapiens

<400> 23

Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr Gln 1 5 10 15

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile
20 25 30

Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr Ile Val Asn Leu Ala Val Ala Asp Leu Leu Thr Ser Thr Val Leu Pro Phe Ser Ala Ile Phe Glu Val Leu Gly Tyr Trp Ala Phe Gly Arg 85 90 Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala 100 105 Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val 120 Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Leu 135 Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly 150 Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys 170 Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser 180 Phe Tyr Leu Pro Leu Ala Ile Ile Leu Val Met Tyr Cys Arg Val Tyr 200 Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr 215 Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn 225 230 235 Ala Pro Ala Gly Gly Ser Gly Met Ala Ser Ala Lys Thr Lys Thr His

245

Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys 260 265 270

Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe 275 280 285

Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Lys Pro Ser 290 295 300

Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys 305 310 315 320

Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala 325 330 335

Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Cys Arg Lys Gln Ser Ser 340 345 350

Lys His Ala Leu Gly Tyr Thr Leu His Pro Pro Ser Gln Ala Val Glu 355 360 365

Gly Gln His Lys Asp Met Val Arg Ile Pro Val Gly Ser Arg Glu Thr 370 375 380

Phe Tyr Arg Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe 385 390 395 400

Ser Ser Met Pro Arg Gly Ser Ala Arg Ile Thr Val Ser Lys Asp Gln 405 410 415

Ser Ser Cys Thr Thr Ala Arg Val Arg Ser Lys Ser Phe Leu Gln Val 420 425 430

Cys Cys Cys Val Gly Pro Ser Thr Pro Ser Leu Asp Lys Asn His Gln 435 440 445

Val Pro Thr Ile Lys Val His Thr Ile Ser Leu Ser Glu Asn Gly Glu 450 455 460

Glu Val 465

<210> 24

<211> 470

<212> PRT

<213> Oryzias latipes

<400> 24

Met Thr Pro Ser Ser Val Thr Leu Asn Cys Ser Asn Cys Ser His Val 1 5 10 15

Leu Ala Pro Glu Leu Asn Thr Val Lys Ala Val Val Leu Gly Met Val
20 25 30

Leu Gly Ile Phe Ile Leu Phe Gly Val Ile Gly Asn Ile Leu Val Ile 35 40 45

Leu Ser Val Val Cys His Arg His Leu Gln Thr Val Thr Tyr Tyr Phe 50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Ser Ser Thr Val Leu 65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Ile Leu Asp Arg Trp Val Phe Gly Arg 85 90 95

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala 100 105 110

Ser Ile Met Ser Leu Cys Val Ile Ser Val Asp Arg Tyr Ile Gly Val 115 120 125

Ser Tyr Pro Leu Arg Tyr Pro Ala Ile Met Thr Lys Arg Arg Ala Leu 130 135 140

Leu Ala Val Met Leu Leu Trp Val Leu Ser Val Ile Ile Ser Ile Gly
145 150 155 160

Pro Leu Phe Gly Trp Lys Glu Pro Ala Pro Glu Asp Glu Thr Val Cys 165 170 175

Lys Ile Thr Glu Glu Pro Gly Tyr Ala Ile Phe Ser Ala Val Gly Ser 180 185 190

Phe Tyr Leu Pro Leu Ala Ile Ile Leu Ala Met Tyr Cys Arg Val Tyr 195 200 205

Val Val Ala Gln Lys Glu Ser Arg Gly Leu Lys Glu Gly Gln Lys Ile Glu Lys Ser Asp Ser Glu Gln Val Ile Leu Arg Met His Arg Gly Asn Thr Thr Val Ser Glu Asp Glu Ala Leu Arg Ser Arg Thr His Phe Ala Leu Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe Phe Leu Val Leu Pro Ile Gly Ser Ile Phe Pro Ala Tyr Arg Pro Ser Asp Thr Val Phe Lys Ile Thr Phe Trp Leu Gly Tyr Phe Asn Ser Cys Ile Asn Pro Ile Ile Tyr Leu Cys Ser Asn Gln Glu Phe Lys Lys Ala Phe Gln Ser Leu Leu Gly Val His Cys Leu Arg Met Thr Pro Arg Ala His His His His Leu Ser Val Gly Gln Ser Gln Thr Gln Gly His Ser Leu Thr Ile Ser Leu Asp Ser Lys Gly Ala Pro Cys Arg Leu Ser Pro Ser Ser Ser Val Ala Leu Ser Arg Thr Pro Ser Ser Arg Asp Ser Arg Glu Trp Arg Val Phe Ser Gly Gly Pro Ile Asn Ser Gly Pro Gly Pro Thr Glu Ala Gly Arg Ala Lys Val Ala Lys Leu Cys Asn Lys Ser Leu His Arg

Thr Cys Cys Cys Ile Leu Arg Ala Arg Thr Pro Thr Gln Asp Pro Ala 435 440 445

Pro Leu Gly Asp Leu Pro Thr Ile Lys Ile His Gln Leu Ser Leu Ser 450 460

Glu Lys Gly Glu Ser Val 465 470

<210> 25

<211> 391

<212> PRT

<213> Branchiostoma lanceolatum

<400> 25

Met Ser Ala Asn Thr Thr Val Ser Pro Thr Glu Thr Thr Ala Asn Leu

5 10 15

Thr Ala Asn Ser Thr Glu Ala Ser Val Gly Ser Cys Phe Ala Pro Asn 20 25 30

Pro Tyr Ser Ala Gly Val Gln Ala Val Leu Gly Leu Ile Thr Val Ile 35 40 45

Leu Ile Leu Thr Val Ile Gly Asn Val Leu Val Ile Leu Ala Val 50 55 60

Thr Cys His Arg Lys Met Arg Thr Val Thr Asn Phe Phe Ile Val Ser 70 75 80

Leu Ala Cys Ala Asp Leu Ser Val Gly Ile Thr Val Leu Pro Phe Ala 85 90 95

Ala Thr Asn Asp Ile Leu Gly Tyr Trp Pro Phe Gly Gly Tyr Cys Asp 100 105 110

Val Trp Val Ser Phe Asp Val Leu Asn Ser Thr Ala Ser Ile Leu Asn 115 120 125

Leu Val Val Ile Ala Phe Asp Arg Phe Leu Ala Ile Thr Ala Pro Phe 130 135 140

Thr Tyr His Thr Arg Met Thr Glu Arg Thr Ala Gly Ile Leu Ile Ala 145 150 155 160

Thr Val Trp Gly Ile Ser Leu Val Val Ser Phe Leu Pro Ile Gln Ala Gly Trp Tyr Arg Asp Asn Gln Ser Glu Glu Ala Leu Ala Ile Tyr Ser Asp Pro Cys Leu Cys Ile Phe Thr Ala Ser Thr Ala Tyr Thr Ile Val Ser Ser Leu Ile Ser Phe Tyr Ile Pro Leu Leu Ile Met Leu Val Phe Tyr Gly Ile Ile Phe Lys Ala Ala Arg Asp Gln Ala Arg Lys Ile Asn Ala Leu Glu Gly Arg Leu Glu Gln Glu Asn Asn Arg Gly Lys Lys Ile Ser Leu Ala Lys Glu Lys Lys Ala Ala Lys Thr Leu Gly Ile Ile Met Gly Val Phe Ile Leu Cys Trp Leu Pro Phe Phe Val Val Asn Ile Val Asn Pro Phe Cys Asp Arg Cys Val Gln Pro Ala Val Phe Ile Ala Leu Thr Trp Leu Gly Trp Ile Asn Ser Cys Phe Asn Pro Ile Ile Tyr Ala Phe Asn Lys Glu Phe Arg Lys Val Phe Val Lys Met Ile Cys Cys His Lys Cys Arg Gly Val Thr Val Gly Pro Asn His Ala Asp Leu Asn Tyr Asp Pro Val Ala Met Arg Leu Lys Lys Arg Gly Glu Asn Ala Asn Gly . Thr Val Asn Gly Asp Ala Asn Gly Lys Ala Asn Gly Asn Ile Glu Ala

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125

Asn Ser Met Lys Ala Asp Lys Gly Arg Thr Glu Val Asn Gln Cys Ser

120

Ile Asp Leu Gly Glu Asp Asp Met Glu Phe Gly Glu Asp Asp Ile Asn 130 135 140

Phe Ser Glu Asp Asp Val Glu Ala Val Asn Ile Pro Glu Ser Leu Pro 145 150 155 160

Pro Ser Arg Arg Asn Ser Asn Ser Asn Pro Pro Leu Pro Arg Cys Tyr
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Gln Cys Lys Ala Ala Lys 180

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Asp Leu Pro Gly Thr Glu Gly Gly Thr Glu Gly Lys Ile Val Pro Ser 35 40 45

Tyr Asp Ser Ala Thr Phe Pro 50 55

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Val Val Thr Leu Tyr Lys Lys Ser Tyr Leu Leu Thr Leu Ser Asn Lys
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Phe Val Phe Ser Leu Thr Leu Ser Asn Phe Leu Leu Ser Val Leu Val 65 70 75 80

Leu Pro Phe Val Val Thr Ser Ser Ile Arg Arg Glu Trp Ile Phe Gly
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Val Val Trp Cys Asn Phe Ser Ala Leu Leu Tyr Leu Leu Ile Ser Ser 100 105 110

Ala Ser Met Leu Thr Leu Gly Val Ile Ala Ile Asp Arg Tyr Tyr Ala 115 120 125

Val Leu Tyr Pro Met Val Tyr Pro Met Lys Ile Thr Gly Asn Arg Ala 130 135 140

Val Met Ala Leu Val Tyr Ile Trp Leu His Ser Leu Ile Gly Cys Leu 145 150 155 160

Pro Pro Leu Phe Gly Trp Ser Ser Val Glu Phe Asp Glu Phe Lys Trp 165 170 175

Met Cys Val Ala Ala Trp His Arg Glu Pro Gly Tyr Thr Ala Phe Trp 180 185 190

Gln Ile Trp Cys Ala Leu Phe Pro Phe Leu Val Met Leu Val Cys Tyr 195 200 205

Gly Phe Ile Phe Arg Val Ala Arg Val Lys Ala Arg Lys Val His Cys 210 215 220

Gly Thr Val Val Ile Val Glu Glu Asp Ala Gln Arg Thr Gly Arg Lys

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Asn Ser Ser Thr Ser Thr Ser Ser Ser Gly Ser Arg Asn Ala Phe
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Gln Gly Val Val Tyr Ser Ala Asn Gln Cys Lys Ala Leu Ile Thr Ile 260 265 270

Leu Val Val Leu Gly Ala Phe Met Val Thr Trp Gly Pro Tyr Met Val 275 280 285

Val Ile Ala Ser Glu Ala Leu Trp Gly Lys Ser Ser Val Ser Pro Ser 290 295 300

Leu Glu Thr Trp Ala Thr Trp Leu Ser Phe Ala Ser Ala Val Cys His 305 310 315 320

Pro Leu Ile Tyr Gly Leu Trp Asn Lys Thr Val Arg Lys Glu Leu Leu 325 330 335

Gly Met Cys Phe Gly Asp Arg Tyr Tyr Arg Glu Pro Phe Val Gln Arg 340 345 350

Gln Arg Thr Ser Arg Leu Phe Ser Ile Ser Asn Arg Ile Thr Asp Leu 355 360 365

Gly Leu Ser Pro His Leu Thr Ala Leu Met Ala Gly Gly Gln Pro Leu 370 375 380

Gly His Ser Ser Ser Thr Gly Asp Thr Gly Phe Ser Cys Ser Gln Asp 385 390 395

Ser Gly Asn Leu Arg Ala Leu 405

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Cys Val Glu Asn Glu Asp Glu Glu Gly Ala Glu Lys Lys Glu Glu Phe
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Gln Asp Glu Ser Glu Phe Arg Arg Gln His Glu Gly Glu Val Lys Ala 260 265 270

Lys Glu Gly Arg Met Glu Ala Lys Asp Gly Ser Leu Lys Ala Lys Glu 275 280 285

Gly Ser Thr Gly Thr Ser Glu Ser Ser Val Glu Ala Arg Gly Ser Glu 290 295 300

Glu Val Arg Glu Ser Ser Thr Val Ala Ser Asp Gly Ser Met Glu Gly 305 310 315 320

Lys Glu Gly Ser Thr Lys Val Glu Glu Asn Ser Met Lys Ala Asp Lys 325 330 335

Gly Arg Thr Glu Val Asn Gln Cys Ser Ile Asp Leu Gly Glu Asp Asp 340 345 350

Met Glu Phe Gly Glu Asp Asp Ile Asn Phe Ser Glu Asp Asp Val Glu 355 360 365

Ala Val Asn Ile Pro Glu Ser Leu Pro Pro Ser Arg Arg Asn Ser Asn 370 375 380

Ser Asn Pro Pro Leu Pro Arg Cys Tyr Gln Cys Lys Ala Lys Lys Val 385 390 395 400

Ile Phe Ile Ile Phe Ser Tyr Val Leu Ser Leu Gly Pro Tyr Cys 405 410 415

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Ile Arg Ser Thr Val Leu Val Ile Phe Leu Ala Ala Ser Phe Val Gly 35 40 45

Asn Ile Val Leu Ala Leu Val Leu Gln Arg Lys Pro Gln Leu Leu Gln 50 55 60

Val Thr Asn Arg Phe Ile Phe Asn Leu Leu Val Thr Asp Leu Leu Gln 65 70 75 80

Ile Ser Leu Val Ala Pro Trp Val Val Ala Thr Ser Val Pro Leu Phe 85 90 95

Trp Pro Leu Asn Ser His Phe Cys Thr Ala Leu Val Ser Leu Thr His
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Leu Phe Ala Phe Ala Ser Val Asn Thr Ile Val Val Ser Val Asp 115 120 125

Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met Thr 130 135 140

Gln Arg Arg Gly Tyr Leu Leu Leu Tyr Gly Thr Trp Ile Val Ala Ile 145 150 155 160

Leu Gln Ser Thr Pro Pro Leu Tyr Gly Trp Gly Gln Ala Ala Phe Asp 165 170 175

Glu Arg Asn Ala Leu Cys Ser Met Ile Trp Gly Ala Ser Pro Ser Tyr 180 185 190

Thr Ile Leu Ser Val Val Ser Phe Ile Val Ile Pro Leu Ile Val Met 195 200 205

Ile Ala Cys Tyr Ser Val Val Phe Cys Ala Ala Arg Arg Gln His Ala 210 215 220

Leu Leu Tyr Asn Val Lys Arg His Ser Leu Glu Val Arg Val Lys Asp Cys Val Glu Asn Glu Asp Glu Glu Gly Ala Glu Lys Lys Glu Glu Phe 250 Gln Asp Glu Ser Glu Phe Arg Arg Gln His Glu Gly Glu Val Lys Ala 265 Lys Glu Gly Arg Met Glu Ala Lys Asp Gly Ser Leu Lys Ala Lys Glu 280 Gly Ser Thr Gly Thr Ser Glu Ser Ser Val Glu Ala Arq Gly Ser Glu 295 Glu Val Arg Glu Ser Ser Thr Val Ala Ser Asp Gly Ser Met Glu Gly 310 315 Lys Glu Gly Ser Thr Lys Val Glu Glu Asn Ser Met Lys Ala Asp Lys 330 Gly Arg Thr Glu Val Asn Gln Cys Ser Ile Asp Leu Gly Glu Asp Asp Met Glu Phe Gly Glu Asp Asp Ile Asn Phe Ser Glu Asp Asp Val Glu 360 Ala Val Asn Ile Pro Glu Ser Leu Pro Pro Ser Arg Arg Asn Ser Asn 375 Ser Asn Pro Pro Leu Pro Arg Cys Tyr Gln Cys Lys Ala Lys Lys Val 390 Ile Phe Ile Ile Phe Ser Tyr Val Leu Ser Leu Gly Pro Tyr Cys 405 410 415 Phe Leu Ala Val Glu Asp Ser His Pro Asp Leu Pro Gly Thr Glu Gly 420 425 430 Gly Thr Glu Gly Lys Ile Val Pro Ser Tyr Asp Ser Ala Thr Phe Pro 435 440 445

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Ile Arg Ser Thr Val Leu Val Ile Phe Leu Ala Ala Ser Phe Val Gly
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Asn Ile Val Leu Ala Leu Val Leu Gln Arg Lys Pro Gln Leu Leu Gln 50 55 60

Val Thr Asn Arg Phe Ile Phe Asn Leu Leu Val Thr Asp Leu Leu Gln 65 70 75 80

Ile Ser Leu Val Ala Pro Trp Val Val Ala Thr Ser Val Pro Leu Phe
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Trp Pro Leu Asn Ser His Phe Cys Thr Ala Leu Val Ser Leu Thr His
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Leu Phe Ala Phe Ala Ser Val Asn Thr Ile Val Leu Val Ser Val Asp 115 120 125

Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met Thr 130 135 140

Gln Arg Arg Gly Tyr Leu Leu Leu Tyr Gly Thr Trp Ile Val Ala Ile 145 150 155 160

Leu Gln Ser Thr Pro Pro Leu Tyr Gly Trp Gly Gln Ala Ala Phe Asp 165 170 175

Glu Arg Asn Ala Leu Cys Ser Met Ile Trp Gly Ala Ser Pro Ser Tyr 180 185 190

Thr Ile Leu Ser Val Val Ser Phe Ile Val Ile Pro Leu Ile Val Met 195 200 205

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1020

1080

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Homo sapiens

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ggtaccccag tgggtgatca ccataatcat ctggcttttc ttcctgcagt gctgcatcca
                                                                    1380
cccctatgtc tatggctaca tgcacaagac cattaagaag gaaatccagg acatgctgaa
                                                                    1440
gaagttette tgeaaggaaa ageeceegaa agaagatage cacceagace tgeeeggaae
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                                                                     120
ttcctcgccg cctctttcgt cggcaacata gtgctggcgc tagtgttgca gcgcaagccg
                                                                     180
cagctgctgc aggtgaccaa ccgttttatc tttaacctcc tcgtcaccga cctgctgcag
                                                                     240
atttegeteg tggcccctg ggtggtggcc acctetgtgc etctettetg gecceteaac
                                                                     300
agecacttct gcacggccct ggttagcctc acccacctgt tcgccttcgc cagcgtcaac
                                                                     360
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420

480

accattgtcn tggtgtcagt ggatcgctac ttgtccatca tccaccctct ctcctacccg

tccaagatga cccagcgccg cggttacctg ctcctctatg gcacctggat tgtggccatc

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                                                                      540
ctctgctcca tgatctgggg ggccagcccc agctacacta ttctcagcgt ggtgtccttc
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atogtoatto cactgattgt catgattgcc tgctactccg tggtgttctg tgcagcccgg
                                                                      660
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aggcagcatg ctctgctgta caatgtcaag agacacagct tggaagtgcg agtcaaggac
                                                                      780
tgtgtggaga atgaggatga agagggagca gagaagaagg aggagttcca ggatgagagt
gagtttcgcc gccagcatga aggtgaggtc aaggccaagg agggcagaat ggaagccaag
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gacggcagcc tgaaggccaa ggaaggaagc acggggacca gtgagagtag tgtagaggcc
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aaggaaggca gcaccaaagt tgaggagaac agcatgaagg cagacaaggg tcgcacagag
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aatttcagtg aggatgacgt cgaggcagtg aacatcccgg agagcctccc acccagtcgt
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cgtaacagca acagcaaccc tcctctgccc aggtgctacc agtgcaaagc tnnnaaagtg
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- <221> misc_feature
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<213> Homo sapiens

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35 40 45

Asn Ile Val Leu Ala Leu Val Leu Gln Arg Lys Pro Gln Leu Leu Gln 50 55 60

Val Thr Asn Arg Phe Ile Phe Asn Leu Leu Val Thr Asp Leu Leu Gln 65 70 75 80

Ile Ser Leu Val Ala Pro Trp Val Val Ala Thr Ser Val Pro Leu Phe 85 90 95

Trp Pro Leu Asn Ser His Phe Cys Thr Ala Leu Val Ser Leu Thr His
100 105 110

Leu Phe Ala Phe Ala Ser Val Asn Thr Ile Val Xaa Val Ser Val Asp 115 120 125

Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met Thr 130 135 140

Gln Arg Arg Gly Tyr Leu Leu Leu Tyr Gly Thr Trp Ile Val Ala Ile 145 150 155 160

Leu Gln Ser Thr Pro Pro Leu Tyr Gly Trp Gly Gln Ala Ala Phe Asp 165 170 175

Glu Arg Asn Ala Leu Cys Ser Met Ile Trp Gly Ala Ser Pro Ser Tyr 180 185 190

Thr Ile Leu Ser Val Val Ser Phe Ile Val Ile Pro Leu Ile Val Met 195 200 205

Ile Ala Cys Tyr Ser Val Val Phe Cys Ala Ala Arg Arg Gln His Ala 210 215 220

Leu Leu Tyr Asn Val Lys Arg His Ser Leu Glu Val Arg Val Lys Asp Cys Val Glu Asn Glu Asp Glu Glu Gly Ala Glu Lys Lys Glu Glu Phe Gln Asp Glu Ser Glu Phe Arg Arg Gln His Glu Gly Glu Val Lys Ala Lys Glu Gly Arg Met Glu Ala Lys Asp Gly Ser Leu Lys Ala Lys Glu Gly Ser Thr Gly Thr Ser Glu Ser Ser Val Glu Ala Arq Gly Ser Glu Glu Val Arg Glu Ser Ser Thr Val Ala Ser Asp Gly Ser Met Glu Gly Lys Glu Gly Ser Thr Lys Val Glu Glu Asn Ser Met Lys Ala Asp Lys Gly Arg Thr Glu Val Asn Gln Cys Ser Ile Asp Leu Gly Glu Asp Xaa Met Glu Phe Gly Glu Asp Asp Ile Asn Phe Ser Glu Asp Asp Val Glu Ala Val Asn Ile Pro Glu Ser Leu Pro Pro Ser Arg Arg Asn Ser Asn Ser Asn Pro Pro Leu Pro Arg Cys Tyr Gln Cys Lys Ala Xaa Lys Val Ile Phe Ile Ile Phe Ser Tyr Val Leu Ser Leu Gly Pro Tyr Cys Phe Leu Ala Val Leu Ala Val Trp Val Asp Val Glu Thr Gln Val Pro Gln Trp Val Ile Thr Ile Ile Ile Trp Leu Phe Phe Leu Gln Cys Cys

Ile Hi 45		Tyr	Val	Tyr	Gly 455	Tyr	Met	His	Lys	Thr 460	Ile	Lys	Lys	Glu	
Ile Gl 465	n Asp	Met	Leu	Lys 470	Lys	Phe	Phe	Cys	Lys 475	Glu	Lys	Pro	Pro	Lys 480	
Glu As	p Ser	His	Pro 485	Asp	Leu	Pro	Gly	Thr 490	Glu	Gly	Gly	Thr	Glu 495	Gly	
Lys Il	e Val	Pro 500	Ser	Tyr	Asp	Ser	Ala 505	Thr	Phe	Pro					
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      (27)..(84)
<223> wherein "b" equals C, G, or T.
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nnbnnbnnbn nbnnbnnbnn bnnbccgggt ccgggcggc
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<221> misc_feature
<222> (21)..(78)
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<223> wherein "v" equals C, A, or G.
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Leu Glu Trp Gly Ser Asp Val Phe Tyr Asp Val Tyr Asp Cys Cys
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Tyr Ser Val Val Phe
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Tyr Ser Leu Leu Cys Leu Gly Leu Pro Ala Asn Ile Leu Thr Val
                            40
Ile Ile Leu Ser Gln Leu Val Ala Arg Arg Gln Lys Ser Ser Tyr Asn
    50
                        55
                                            60
Tyr Leu Leu Ala Leu Ala Ala Ala Asp Ile Leu Val Leu Phe Phe Ile
65
                    70
                                        75
                                                            80
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90

Val Phe Val Asp Phe Leu Leu Glu Asp Phe Ile Leu Asn Met Gln Met

85

Pro Gln Val Pro Asp Lys Ile Ile Glu Val Leu Glu Phe Ser Ser Ile His Thr Ser Ile Trp Ile Thr Val Pro Leu Thr Ile Asp Arg Tyr Ile Ala Val Cys His Pro Leu Lys Tyr His Thr Val Ser Tyr Pro Ala Arg Thr Arg Lys Val Ile Val Ser Val Tyr Ile Thr Cys Phe Leu Thr Ser Ile Pro Tyr Tyr Trp Pro Asn Ile Trp Thr Glu Asp Tyr Ile Ser Thr Ser Val His His Val Leu Ile Trp Ile His Cys Phe Thr Val Tyr Leu Val Pro Cys Ser Ile Phe Phe Ile Leu Asn Ser Ile Ile Val Tyr Lys Leu Arg Arg Lys Ser Asn Phe Arg Leu Arg Gly Tyr Ser Thr Gly Lys Thr Thr Ala Ile Leu Phe Thr Ile Thr Ser Ile Phe Ala Thr Leu Trp Ala Pro Arg Ile Ile Met Ile Leu Tyr His Leu Tyr Gly Ala Pro Ile Gln Asn Arg Trp Leu Val His Ile Met Ser Asp Ile Ala Asn Met Leu Ala Leu Leu Asn Thr Ala Ile Asn Phe Phe Leu Tyr Cys Phe Ile Ser Lys Arg Phe Arg Thr Met Ala Ala Thr Leu Lys Ala Phe Phe Lys Cys Gln Lys Gln Pro Val Gln Phe Tyr Thr Asn His Asn Phe Ser

Ile Thr Ser Ser Pro Trp Ile Ser Pro Ala Asn Ser His Cys Ile Lys 325 330 335

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Ala Gln Lys Phe Thr Gly Gly Ile Gly Asn Lys Leu Cys Ala Leu Leu 35 40 45

Tyr Gly Asp Ala Glu Lys Pro Ala Glu Ser Gly Gly Ser Gln Pro Pro 50 55 60

Arg Ala Ala Arg Lys Ala Ala Cys Ala Cys Asp Gln Lys Pro Cys 65 70 75 80

Ser Cys Ser Lys Val Asp Val Asn Tyr Ala Phe Leu His Ala Thr Asp 85 90 95

Leu Leu Pro Ala Cys Asp Gly Glu Arg Pro Thr Leu Ala Phe Leu Gln
100 105 110

Asp Val Met Asn Ile Leu Leu Gln Tyr Val Val Lys Ser Phe Asp Arg 115 120 125

Ser Thr Lys Val Ile Asp Phe His Tyr Pro Asn Glu Leu Leu Gln Glu

130 135 140

Met His Cys Gln Thr Thr Leu Lys Tyr Ala Ile Lys Thr Gly His Pro 165 170 175

Arg Tyr Phe Asn Gln Leu Ser Thr Gly Leu Asp Met Val Gly Leu Ala 180 185 190

Ala Asp Trp Leu Thr Ser Thr Ala Asn Thr Asn Met Phe Thr Tyr Glu
195 200 205

Ile Ala Pro Val Phe Val Leu Leu Glu Tyr Val Thr Leu Lys Lys Met 210 215 220

Arg Glu Ile Ile Gly Trp Pro Gly Gly Ser Gly Asp Gly Ile Phe Ser 225 230 235 240

Pro Gly Gly Ala Ile Ser Asn Met Tyr Ala Met Met Ile Ala Arg Phe 245 250 255

Lys Met Phe Pro Glu Val Lys Glu Lys Gly Met Ala Ala Leu Pro Arg 260 265 270

Leu Ile Ala Phe Thr Ser Glu His Ser His Phe Ser Leu Lys Lys Gly 275 280 285

Ala Ala Leu Gly Ile Gly Thr Asp Ser Val Ile Leu Ile Lys Cys 290 295 300

Asp Glu Arg Gly Lys Met Ile Pro Ser Asp Leu Glu Arg Arg Ile Leu 305 310 315 320

Glu Ala Lys Gln Lys Gly Phe Val Pro Phe Leu Val Ser Ala Thr Ala 325 330 335

Gly Thr Thr Val Tyr Gly Ala Phe Asp Pro Leu Leu Ala Val Ala Asp 340 345 350

Ile Cys Lys Lys Tyr Lys Ile Trp Met His Val Asp Ala Ala Trp Gly 355 360 365

Gly Gly Leu Leu Met Ser Arg Lys His Lys Trp Lys Leu Ser Gly Val Glu Arg Ala Asn Ser Val Thr Trp Asn Pro His Lys Met Met Gly Val Pro Leu Gln Cys Ser Ala Leu Leu Val Arg Glu Glu Gly Leu Met Gln Asn Cys Asn Gln Met His Ala Ser Tyr Leu Phe Gln Gln Asp Lys His Tyr Asp Leu Ser Tyr Asp Thr Gly Asp Lys Ala Leu Gln Cys Gly Arg His Val Asp Val Phe Lys Leu Trp Leu Met Trp Arg Ala Lys Gly Thr Thr Gly Phe Glu Ala His Val Asp Lys Cys Leu Glu Leu Ala Glu Tyr Leu Tyr Asn Ile Ile Lys Asn Arg Glu Gly Tyr Glu Met Val Phe Asp Gly Lys Pro Gln His Thr Asn Val Cys Phe Trp Tyr Ile Pro Pro Ser Leu Arg Thr Leu Glu Asp Asn Glu Glu Arg Met Ser Arg Leu Ser Lys Val Ala Pro Val Ile Lys Ala Arg Met Met Glu Tyr Gly Thr Thr Met Val Ser Tyr Gln Pro Leu Gly Asp Lys Val Asn Phe Phe Arg Met Val Ile Ser Asn Pro Ala Ala Thr His Gln Asp Ile Asp Phe Leu Ile Glu Glu Ile Glu Arg Leu Gly Gln Asp Leu

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Phe Cys
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<211> 25

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